Claims

1. A method for producing a support for determining analytes, comprising the steps of
   (a) providing a support comprising at least one closed channel in the support body,
   (b) passing liquid with building blocks for synthesizing polymeric receptors through the channel or channels of the support body,
   (c) site- or/and time-specifically immobilizing the receptor building blocks in each case on predetermined positions in the channel or channels by illumination and
   (d) repeating steps (b) and (c) until the required receptors have been synthesized in each case on the predetermined positions.

2. The method as claimed in claim 1, characterized in that a support which comprises defined areas with, in each case, identical receptor species, is produced.

3. The method as claimed in claim 1 or 2, characterized in that the channels are arranged on at least one support surface.

4. The method as claimed in any of claims 1 to 3, characterized in that the support comprises a large number of channels which are preferably arranged parallel to one another.

5. The method as claimed in any of claims 1 to 4, characterized in that the receptors are selected from nucleic acids and nucleic acid analogs.

6. The method as claimed in claim 5, characterized in that the receptor building blocks are selected

from nucleotides, oligonucleotides, nucleotide analogs and oligonucleotide analogs.

7. The method as claimed in any of claims 1 to 4, characterized in that the receptors are selected from polypeptides.

8. The method as claimed in claim 7, characterized in that the receptor building blocks are selected from amino acids and peptides.

9. The method as claimed in any of claims 1 to 8, characterized in that the illumination takes place via a programmable light source matrix.

10. The method as claimed in any of claims 1 to 9, characterized in that the pattern of polymeric receptors is determined by computer programming.

11. The method as claimed in any of claims 1 to 10, characterized in that the support is used for determining analytes in a sample.

12. A method for integrated synthesis and analyte determination on a support, comprising the steps of:

(a) providing a support body,

(b) passing a liquid with, present therein, receptors or building blocks for synthesizing polymeric receptors over the support,

(c) site- or/and time-specifically immobilizing the receptors or receptor building blocks in each case on predetermined positions on the support, the synthesis and analyte determination being carried out in an integrated apparatus, with the synthesis or/and the analyte determination process

being monitored and controlled in any number of positions on the support,

(d) where appropriate, repeating steps (b) and (c) until the required receptors have been synthesized in each case on the predetermined positions on the support,

(e) bringing the support into contact with a sample containing analytes and

(f) determining the analytes via their binding to the receptors immobilized on the support.

13. The method as claimed in claim 12, characterized in that an integrated apparatus comprising a programmable light source matrix, a detector matrix, a support arranged between light source matrix and detector matrix, and means for supplying fluids into the support and for discharging fluids from the support is used.

14. The method as claimed in either of claims 12 or 13, characterized in that the analyte is removed again from the support after the determination.

15. The method as claimed in any of claims 12 to 14, characterized in that a plurality of synthesis/analyte determination cycles is carried out, with the receptors for a subsequent cycle being synthesized on the basis of the information from a preceding cycle.

16. The method as claimed in claim 15, characterized in that an extension of the receptors from the preceding cycle takes place for the subsequent cycle.

17. The method as claimed in claim 15, characterized in that a new support with receptors which are

modified compared with the preceding cycle is synthesized for the subsequent cycle.

18. The method as claimed in claim 17, characterized in that the modification of the receptors comprises a change in the sequence or/and an exclusion of negative receptors from the preceding cycle.

19. The method as claimed in any of claims 12 to 18, characterized in that a planar support is used.

20. The method as claimed in any of claims 12 to 18, characterized in that a support with a large number of channels is used.

21. The method as claimed in any of claims 12 to 20, characterized in that a plurality of supports is used for a synthesis/analyte determination cycle.

22. The method as claimed in claim 21, characterized in that the plurality of supports is synthesized and analyzed in different detection apparatuses between which there are information technology links but which may be spatially separated from one another.

23. The method as claimed in claim 20, characterized in that a support comprising a large number of channels, a large number of different receptors being immobilized in the channels, is used.

24. The method as claimed in claim 23, characterized in that the support is optically transparent at least in the region of the reaction regions.

25. The method as claimed in claim 23 or 24,

characterized in that a reagent kit comprising the support and building blocks for synthesizing polymeric receptors on the support is employed.

26. The method as claimed in claim 13, characterized in that the apparatus additionally comprises means for deprotection of reaction components on the support.

27. The method as claimed in claim 13 or 26, characterized in that the apparatus additionally comprises electronic control means.

28. The use of the method as claimed in any of claims 1 to 27 for the sequencing of nucleic acids.

29. The use as claimed in claim 28 for new sequencing or/and resequencing of complexed genetic materials such as, for example, individual genomes or synthetic nucleic acids.

30. The use of the method as claimed in any of claims 1 to 27 for obtaining diagnostic information for individual patient management such as, for example, the individual effect of pharmaceuticals.

31. The use of the method as claimed in any of claims 1 to 27 for analyzing the effect of pharmacological substances.

32. The use of the method as claimed in any of claims 1 to 27 for setting up and analyzing substance libraries.

33. The use of the method as claimed in any of

claims 1 to 27 for comparing individuals in a population.